

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: Gail A. Alverson, et al.

FILED: Herewith

FOR: **DETECTING ACCESS TO A MEMORY
LOCATION IN A MULTITHREADED
ENVIRONMENT (AS AMENDED)****Information Disclosure Statement Within Three Months of
Application Filing or Before First Action – 37 C.F.R. § 1.97(b)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Timing of Submission

This information disclosure is being filed within three months of the filing date of this application or date of entry into the national stage of an international application or before the mailing date of a first Office action on the merits, whichever occurs last [37 C.F.R. § 1.97(b)]. The references listed on the enclosed Form PTO-1449 (modified) may be material to the examination of this application; the Examiner is requested to make them of record in the application.

2. Cited Information

- Copies of the following references are enclosed:
 - All cited references
 - Reference marked by an asterisk
 - The following:
- Copies of the following references can be found in parent U.S. Application No. 09/361,671:
 - All cited references
 - References not marked by asterisks
 - The following:
- The following references are not in English. For each such reference, the undersigned has enclosed (i) a translation of the reference; (ii) a copy of a communication from a foreign patent office or International Searching

Authority citing the reference, (iii) a copy of a reference which appears to be an English-language counterpart, or (iv) an English-language abstract for the reference prepared by a third party. Applicant has not verified that the translation, English-language counterpart or third-party abstract is an accurate representation of the teachings of the non-English reference, though, and reserves the right to demonstrate otherwise.

- All cited references
- References marked by ampersands
- The following:

3. Effect of Information Disclosure Statement (37 C.F.R. § 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

4. Fee Payment

No fees are believed due because this Information Disclosure Statement is being filed before the mailing date of the first Office Action.

- Applicant further submits that no fee is due in light of the following certification under 37 C.F.R. § 1.97(e) (check only one):
 - In accordance with 37 C.F.R. § 1.97(e)(1), the undersigned hereby states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement; or
 - In accordance with 37 C.F.R. § 1.97(e)(2), the undersigned hereby states that no item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of this statement.

However, should the Commissioner determine that fees are due in order for this Information Disclosure Statement to be considered, the Commissioner is hereby authorized to charge such fees to Deposit Account No. 50-0665.

5. Patent Term Adjustment (37 C.F.R. § 1.704(d))

- The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. § 1.704(d).

Respectfully submitted,
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Form PTO-1449 (Modified) (Use several sheets if necessary)				COMPLETE IF KNOWN	
				Express Mail No.	EV335524655US
				Application Number	
				Confirmation Number	
				Filing Date	Herewith
				First Named Inventor	Gail A. Alverson
				Group Art Unit	
Examiner Name					
Sheet	1	of	5	Attorney Docket No.	32475-8003US7

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		NUMBER	Kind Code (if known)			
*	4,779,187			Letwin	10/18/88	
	4,819,234			Huber	4/4/89	
	4,872,167			Maezawa et al.	10/3/89	
	5,168,554			Luke	12/1/92	
	5,301,325			Benson	4/5/94	
	5,333,280			Ishikawa et al.	7/26/94	
	5,450,575			Sites	9/12/95	
	5,504,932			Vassiliadis et al.	4/2/96	
	5,533,192			Hawley et al.	7/2/96	
	5,557,761			Chan	9/17/96	
	5,564,051			Halliwell et al.	10/8/96	
	5,581,764			Fitzgerald	12/3/96	
	5,594,864			Trauben	1/14/97	
	5,598,560			Benson	1/28/97	
	5,632,032			Ault et al.	5/20/97	
	5,652,889			Sites	7/29/97	
	5,712,996			Schepers	1/27/98	
	5,754,855			Miller et al.	5/19/98	
	5,768,591			Robinson	6/16/98	
	5,768,592			Chang	6/16/98	
	5,774,721			Robinson	6/30/98	
	5,787,245			You et al.	7/28/98	
	5,805,892			Nakajima	9/8/98	
	5,812,811			Dubey et al.	9/22/98	
	5,826,265			Van Huben et al.	10/20/98	
	5,867,643			Sutton	2/2/99	
	5,877,766			Bates et al.	3/2/99	
	5,887,166			Mallick et al.	3/23/99	
	5,901,315			Edwards et al.	5/4/99	
	5,903,730			Asai et al.	5/11/99	
	5,913,925			Kahle et al.	6/22/99	
	5,953,530			Rishi et al.	9/14/99	
	5,961,639			Mallick et al.	10/5/99	

EXAMINER	DATE CONSIDERED
<p>*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).</p>	

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		NUMBER	Kind Code (if known)		
		5,966,539		Srivastava	10/12/99
		5,978,902		Mann	11/2/99
		6,002,872		Alexander III et al.	12/14/99
		6,002,879		Radigan et al.	12/14/99
		6,009,269		Burrows et al.	12/28/99
		6,029,005		Radigan	2/22/00
		6,049,671		Slivka et al.	4/11/00
		6,058,493		Talley	5/2/00
		6,059,840		Click, Jr.	5/9/00
		6,072,952		Janakiraman	6/6/00
		6,094,716		Witt	7/25/00
		6,101,524		Choi et al.	8/8/00
		6,112,293		Witt	8/29/00
		6,151,701		Humphreys et al.	11/21/00
		6,151,704		Radigan	11/21/00

FOREIGN PATENT DOCUMENTS

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		Office	NUMBER	Kind Code (if known)				
		DE	19710252	A1	Fujitsu Ltd.	2/26/98		
		EP	0422945		International Business Machines	4/17/91		
		EP	0455966		International Business Machines	11/13/91		
		EP	0537098		International Business Machines	4/14/93		
		EP	0855648		Texas Instruments, Inc.	7/29/98		
		EP	0864979		Digital Equipment Corporation	9/16/98		
		GB	2307760		AT&T Corp.	6/4/97		

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		"Method of Tracing Events in Multi-Threaded OS/2 Applications," IBM Tech. Disclosure Bulletin, September 1993, pp. 19-22			
		Adelberg, Brad et al., "The Strip Rule System for Efficiently Maintaining Derived Data," Sigmod Record, Association for Computing Machinery, New York, Vol. 26, No. 2, June 1, 1997			
		Agrawal, Gagan et al., "Interprocedural Data Flow Based Optimizations for Compilation of Irregular Problems," Annual Workshop on Languages and Compilers for Parallel Computing, 1995			
		Agrawal, Hiralal , "Dominators, Super Blocks and Program Coverage," 21st ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages, Portland, Oregon, January 17-21, 1994			
		Alverson, Gail et al., "Processor Management in the Tera MTA System," 1995			
		Alverson, Gail et al., "Scheduling on the Tera MTA," Job Scheduling Strategies for Parallel Processing, 1995			
		Alverson, Gail et al., "Tera Hardware-Software Cooperation," Proceedings of Supercomputing 1997, San Jose, California, November 1997			
		Alverson, Robert et al, "The Tera Computer System,"Proceedings of 1990 ACM International Conference on Supercomputing, June 1990			
		Anderson, Jennifer, et al., "Continuous Profiling: Where Have All The Cycles Gone?," Operating Systems Review, ACM Headquarters, New York, Vol. 31, No. 5, December 1, 1997			
		Bailey, D.H. et al., "The NAS Parallel Benchmarks – Summary and Preliminary Results," Numerical Aerodynamic Simulation (NAS) Systems Division, NASA Ames Research Center, California, 1991			
		Briggs, Preston et al., "Coloring Heuristics for Register Allocation," Department of Computer Science, Rice University, Houston, Texas, June 1989			
		Briggs, Preston et al., "Coloring Register Pairs," ACM Letters on Programming Languages and Systems, Vol. 1, No. 1, March 1992, pp. 3-13			
		Briggs, Preston et al., "Effective Partial Redundancy Elimination," ACM SIGPLAN Notices, Association for Computing Machinery, New York, Vol. 29, No. 6, June 1, 1994			
		Callahan, David et al., "A Future-Based Parallel Language for a General-Purpose Highly-Parallel Computer, Languages and Compilers for Parallel Computing, MIT Press, 1990			

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		Callahan, David et al., "Improving Register Allocation for Subscripted Variables," Proceedings of the ACM SIGPLAN Conference on Programming Language Design and Implementation, White Plains, New York, June 20-22, 1990			
		Callahan, David et al., "Register Allocation via Hierarchical Graph Coloring," Proceedings of the ACM SIGPLAN '91 Conference on Programming Language Design and Implementation, Toronto, Canada, June 26, 28-1991			
		Callahan, David, "Recognizing and Parallelizing Bounded Recurrences," August 1991			
		Chaudhuri, Surajit et al., "An Overview of Data Warehousing and OLAP Technology," Sigmod Record, Association for Computing, New York, Vol. 26, No. 1, March 1997			
		Chow, Fred C. et al., "The Priority-Based Coloring Approach to Register Allocation," ACM Transactions on Programming Languages and Systems, Vol. 12, No. 4, October 1990, pp. 501-536			
		Click, Cliff, "Global Code Motion, Global Value Numbering," ACM SIGPLAN Notices, Association for Computing Machinery, New York, Vol. 30, No. 6, June 1, 1995			
		Cook, Jonathan E. et al., "Event Based Detection of Concurrency," SIGSOFT '98 ACM, 1998, pp. 34-45			
		Davidson, Jack W. et al., "Reducing the Cost of Branches by Using Registers, "Proceedings of the 17th Annual Symposium on Computer Architecture," Seattle, Washington, May 28-31, 1990			
		Galarowicz, Jim et al., "Analyzing Message Passing Programs on the Cray T3E with PAT and VAMPIR," Research Report, "Online!", May 1998			
		George, Lal et al., "Iterated Register Coalescing," ACM Transactions on Programming Languages and Systems, Vol. 18, No. 3, May 1996, pp. 300-324			
		Goldman, Kenneth J., "Introduction to Data Structures," 1996 (retrieved from Internet, http://www.cs.wustl.edu/kjg/CS101_SP97/Notes?DataStructures/structures.html			
		Hayashi, H. et al., "ALPHA: A High Performance Lisp Machine Equipped with a New Stack Structure and Garbage Collection System," 10th Annual International Symposium on Computer Architecture, 1983			
		Ji, Minwen et al., "Performance Measurements for Multithreaded Programs," SIGMETRICS '98, ACM, 1998, pp. 168-170			

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		Knoop, Jens et al., "The Power of Assignment Motion," ACM SIGPLAN '95 Conference on Programming Language Design and Implementation," La Jolla, California, June 18-21, 1995			
		Kolte, Priyadarshan et al., "Load/Store Range Analysis for Global Register Allocation," ACM-SIGPLAN, June 1993			
		Korry, Richard et al., "Memory Management in the Tera MTA System," 1995			
		Lang, Tomas et al., "Reduced Register Saving/Restoring in Single-Window Register Files," Computer Architecture News, Vol. 14, No. 3, June 1986			
		Linton, Mark A., "The Evolution of Dbx, "USENIX Summer Conference, June 11-15, 1990			
		Major System Characteristics of the TERA MTA, 1995.			
		Ram, Aswhin et al., "Parallel Garbage Collection Without Synchronization Overhead," 12th Annual Symposium on Computer Architecture," June 17, 1985			
		Shim, SangMin et al., "Split-Path Enhanced Pipeline Scheduling for Loops with Control Flows," IEEE, December 2, 1998			
		Smith, Burton, "Opportunities for Growth in High Performance Computing,", November 1995			
		Smith, Burton, "The End of Architecture," Keynote Address Presented at the 17 th Annual Symposium on Computer Architecture, Seattle, Washington, May 29, 1990			
		Smith, Burton, "The Quest for General-Purpose Parallel Computing			
		Sreedhar, Vugranam C. et al., "Incremental Computation of Dominator Trees," ACM SIGPLAN Notices, Association for Computing Machinery, New York, Vol. 30, No. 3, March 1, 1995			
		Tera Computer Company, "TERA MTA Principles of Operation", November 18, 1997, 257pages			
		Touzeau, Roy F., "A Fortran Compiler for the FPS-164 Scientific Computer," Proceedings of the ACM SIGPLAN '84 Symposium on Compiler Construction, SIGPLAN Notices 19(6):48-57, June 1984			
		Tsai, Jenn-Yuan et al., "Performance Study of a Concurrent Multithreaded Processor," IEEE, 1998, pp. 24-35			

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